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(54) Title: STRONG AND DISPERSIBLE PAPER PRODUCTS

(57) Abstract: The invention relates to a flushable paper product comprising a fibrous substrate having (i) at least one strength region comprising a reacted cationic or a reacted nonionic strength agent and (ii) at least one dispersibility region, wherein the paper product has (a) a dispersibility of at least one tenth of a second, (b) a dry strength, and (c) a wet strength of at least about five percent of the dry strength.

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A. CLASSII IPC 7	FICATION OF SUBJECT MATTER D21H27/30 D21H27/00 //D21H2	1:20,D21H21:22	•
	o International Patent Classification (IPC) or to both national classific	cation and IPC	
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Minimum do IPC 7	curnentation searched (classification system followed by classification D21H	uon symbols)	
	lon searched other than minimum documentation to the extent that		
	ata base consulted during the international search (name of data b	ase and, where practical,	search terms used)
WPI Da [.]	ta, EPO—Internal, PAJ	:	
C. DOCUME	ENTS CONSIDERED TO BE RELEVANT	<u>_</u>	
Category °	Citation of document, with indication, where appropriate, of the re	elevant passages :	Relevant to claim No.
Y	US 5 952 251 A (ONO AUDRIE TOMOK 14 September 1999 (1999-09-14) cited in the application the whole document	(O ET AL)	1-24
Υ	US 3 798 120 A (ENLOE K ET AL) 19 March 1974 (1974-03-19) column 2, line 5 - line 47		1-24
Υ	WO 01 38638 A (KIMBERLY CLARK CO 31 May 2001 (2001-05-31) cited in the application abstract))	1-24
		-/	1
		-,	1
1			1
1	1		}
		•	
X Furt	ther documents are listed in the continuation of box C.	X Patent family r	members are listed in annex.
° Special ca	ategories of cited documents :	"T" later document publ	lished after the international filing date
"A" docum	ent defining the general state of the art which is not dered to be of particular relevance		d not in conflict with the application but d the principle or theory underlying the
2	document but published on or after the international	"X" document of particu	ular relevance; the claimed invention ered novel or cannot be considered to
"L" docume which	ent which may throw doubts on priority claim(s) or i is cited to establish the publication date of another on or other special reason (as specified)	involve an inventive "Y" document of particution	ve step when the document is taken alone ular relevance; the claimed invention
"O" docum	on or other special reason (as specially) ment referring to an oral disclosure, use, exhibition or means	document is comb	ered to involve an inventive step when the plined with one or more other such docu- plination being obvious to a person skilled
'P' docume	means tent published prior to the international filing date but han the priority date claimed	in the art.	of the same patent family
	actual completion of the international search	Date of mailing of	the international search report
2	22 December 2003	02/01/2	004
Name and	mailing address of the ISA	Authorized officer	
] 	European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Naeslun	d, P

Form PCT/ISA/210 (second sheet) (July 1992)

Internation pplication No
PCT/US 03/19348

		PC1/US 03/19348
	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Υ	US 6 322 665 B1 (LINDSAY JEFFREY D ET AL) 27 November 2001 (2001-11-27) cited in the application abstract column 2, line 64 - line 67	1-24
A	EP 0 802 282 A (UNI CHARM CORP) 22 October 1997 (1997-10-22)	
Α	WO 98 24974 A (KIMBERLY CLARK CO) 11 June 1998 (1998-06-11)	
A	WO 97 02376 A (KIMBERLY CLARK CO) 23 January 1997 (1997-01-23)	
A	US 5 466 318 A (BJOERK BENGT) 14 November 1995 (1995-11-14)	
Α	WO 97 08384 A (CYTEC TECH CORP) 6 March 1997 (1997-03-06)	
		Ì
	•	
		1

Form PCT/ISA/210 (continuation of second sheet) (July 1992)

Information on patent family members

Internation Populcation No
PCT/US 03/19348

				101/03	03/19348
Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 5952251	A	14-09-1999	AU	730627 B2	08-03-2001
_	-		AU	6130298 A	31-07-1998
			BR	9713793 A	18-09-2001
			CN	1251628 A ,B	26-04-2000
			EP	0950134 A2	20-10-1999
			WO	9829590 A2	09~07~1998
			AU	6289996 A	05-02-1997
			BR	9609656 A	24-10-2000
			CA	2222461 A1	23-01-1997
			DE	29624263 U1	02-08-2001
			DE	69616550 D1	06-12-2001
			DE	69616550 T2	11-04-2002
			EP	0835337 A1	15-04-1998
			ËS	2166454 T3	16-04-2002
			WO	9702376 A1	23-01-1997
			ÜS	5948710 A	07-09-1999
US 3798120	A	19-03-1974	NONE		
WO 0138638	A	31-05-2001	AU	2045101 A	04-06-2001
		_	EP	1234072 A1	28-08-2002
			WO	0138638 A1	31-05-2001
			US	6548427 B1	15-04-2003
US 6322665	B1	27-11-2001	AU	1204901 A	08-05-2001
			BR	0014982 A	16-07-2002
			DE	10085128 TO	24-10-2002
			GB	2374089 A	09-10-2002
			WO	0131123 A1	03-05-2001
			ÜS	2002104633 A1	08-08-2002
EP 0802282	Α	22-10-1997	JP	3150586 B2	26-03-2001
			JP	9132896 A	20-05-1997
			JP	3150587 B2	26-03-2001
			JP	9132897 A	20-05-1997
			CA	2208759 A1	09-05-1997
			EP	0802282 A1	22-10-1997
			KR	235789 B1	15-12-1999
			CN	1172515 A ,B	04-02-1998
			WO	9716597 A1	09-05-1997
WO 9824974	Α	11-06-1998	AU	729194 B2	25-01-2001
			ΑŪ	5360698 A	29-06-1998
			BR	9713842 A	31-10-2000
			CA	2271384 A1	11-06-1998
			CN	1240010 A	29-12-1999
					22-09-1999
			EP	0943036 A1	CC 07 1777
			EP JP	2001505627 T	24-04-2001
			JP	2001505627 T	24-04-2001
			JP NZ	2001505627 T 336391 A	24-04-2001 29-09-2000
WO 9702376	A	23-01-1997	JP NZ US WO	2001505627 T 336391 A 5935383 A	24-04-2001 29-09-2000 10-08-1999
WO 9702376	A	23-01-1997	JP NZ US	2001505627 T 336391 A 5935383 A 9824974 A1	24-04-2001 29-09-2000 10-08-1999 11-06-1998
WO 9702376	Α	23-01-1997	JP NZ US WO AU BR	2001505627 T 336391 A 5935383 A 9824974 A1 6289996 A	24-04-2001 29-09-2000 10-08-1999 11-06-1998 05-02-1997
	A	23-01-1997	JP NZ US WO AU	2001505627 T 336391 A 5935383 A 9824974 A1 6289996 A 9609656 A	24-04-2001 29-09-2000 10-08-1999 11-06-1998 05-02-1997 24-10-2000
	A	23-01-1997	JP NZ US WO AU BR CA	2001505627 T 336391 A 5935383 A 9824974 A1 6289996 A 9609656 A 2222461 A1	24-04-2001 29-09-2000 10-08-1999 11-06-1998 05-02-1997 24-10-2000 23-01-1997

information on patent family members

Internation pplication No
PCT/US 03/19348

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
WO 9702376	A		EP	0835337 A1	15-04-1998
	• •		ËS	2166454 T3	16-04-2002
			WO	9702376 A1	23-01-1997
			บร	5952251 A	14-09-1999
			ÜS	5948710 A	07-09-1999
US 5466318	Α	14-11-1995	SE	469420 B	05-07-1993
			AT	164115 T	15-04-1998
			ΑU	666699 B2	22-02-1996
			AU	3270693 A	28-07-1993
			CA	2123986 A1	08-07-1993
			DE	69224845 D1	23-04-1998
			DE	69224845 T2	04-02-1999
			EP	0617668 A1	05-10-1994
			ES	2115752 T3	01-07-1998
			FΙ	942917 A	17-06-1994
			JР	7504858 T	01-06-1995
			JP	3299540 B2	08-07-2002
			ΜX	9207466 A1	01-06-1993
			NO	942150 A ,B,	09-06-1994
		•	NZ	246408 A	27-02-1996
			RU	2097465 C1	27-11-1997
			SE	9103810 A	21-06-1993
		ر _{الجار} بين جمه ملك درات العالمية الحادث العالمية الحادث العالمية الحادث العالمية الحادث الحادث الحادث الحادث ا	WO	9312936 A1	08-07-1993
WO 9708384	Α	06-03-1997	AT	210221 T	15-12-2001
			ΑU	701985 B2	11-02-1999
			AU	6780496 A	19-03-1997
			BR	9610138 A	02-02-1999
			CA	2230243 A1	06-03-1997
			CN	1194018 A ,B	23-09-1998
			DE	69617702 D1	17-01-2002
			DE	69617702 T2	08-05-2002
			EP	0846200 A1	10-06-1998
			ES	2169254 T3	01-07-2002
			JP	11511514 T	05-10-1999
			NO	980772 A	24-04-1998
			MO	9708384 A1	06-03-1997
			US	2001051687 A1	13-12-2001
			US	6281291 B1	28-08-2001
			US US	6034181 A	07-03-2000
			ZA	5824190 A 9607202 A	20-10-1998
			ZH.	JUU/ZUZ A	03-03-1997